

DEPARTMENT OF TRANSPORTATION**Research and Special Programs Administration****49 CFR Parts 173 and 178****[Docket No. HM-183B; Amdt. Nos. 173-210, 178-92]****RIN 2137-AB34****Rear Bumpers on Cargo Tank Trucks****AGENCY:** Research and Special Programs Administration (RSPA), DOT.**ACTION:** Final rule.

SUMMARY: RSPA is providing a period of 36 months to allow rear bumpers or rear-end tank protection devices to be installed on cargo tank trucks (power units; commonly called bob-tails), which are operated in combination with cargo tank full trailers. Cargo tank trucks operated separately must be equipped with a rear bumper or rear-end tank protection device as prescribed in § 178.340-8(b) of the Hazardous Materials Regulations (HMR)(49 CFR Parts 171 through 199), as amended in this final rule.

This action is being taken to provide operators of these cargo tank trucks reasonable time to bring their units into compliance with the HMR. There may be approximately 3500 affected units, which are being operated primarily in the Western states in deliveries of gasoline, fuel oil and other petroleum distillate products. The intended effect of this action is to bring these cargo tank trucks into compliance with the HMR while minimizing economic impact to motor carriers, the petroleum distillate industry, and the public in the affected geographical areas.

EFFECTIVE DATE: July 1, 1989. However, compliance with the regulations as amended herein is authorized immediately.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:**I. Background**

On August 8, 1986, RSPA published a notice of proposed rulemaking (NPRM) in the Federal Register (51 FR 28605)

under Docket HM-183B, Notice No. 86-8, which proposed to allow a 36-month period for cargo tank trucks manufactured without the required rear bumpers to be brought into compliance with the HMR. Additionally, responses were solicited on several questions regarding the incremental costs of installing rear bumpers on cargo tank trucks, the need for additional markings on non-conforming cargo tank trucks, the grandfathering of existing non-conforming units, the relationship (if any) of the length of the tow bar to rear-end collisions, and frequencies of operating cargo tank trucks without a cargo tank full trailer.

Eleven comments were received in response to the NPRM. Most industry representatives disagreed with the proposal to require that cargo tank trucks be equipped with a rear bumper, when operated in combination with a cargo tank full trailer. Reasons offered to support not requiring rear bumpers included installation costs, loss of payload capacity due to the added bumper weight, and a satisfactory safety record indicating an absence of any serious safety problem for these units. Commenters stated, however, that should DOT require rear bumpers, existing cargo tank trucks manufactured without rear bumpers should be grandfathered to allow their continued use when operated in combination with a cargo tank full trailer. Additionally, they suggested that operation of these grandfathered units, without the full trailer, be allowed when they are being taken to a repair or maintenance facility. Two State agencies expressed support for the 36-month compliance period and a provision allowing the operation of a cargo tank truck, without a rear bumper, to a repair or maintenance facility. In addition, they recommended that the provisions be extended to include other DOT specification cargo tank trucks which are used in other than petroleum distillates service.

Few commenters took exception to requiring the installation of rear bumpers on units which are operated without cargo tank full trailers, with the exception of when a cargo tank truck is being taken to a repair or maintenance facility. They stated that these cargo tank trucks are rarely operated without the cargo tank full trailer attached.

Another commenter objected to the proposed 36-month compliance period as being "irresponsible," and requested the immediate enforcement of the rear bumper requirement. The commenter stated that enforcement is a necessity, especially when the transportation of hazardous materials is involved.

In response to the question raised in the NPRM concerning the method of certification of cargo tanks manufactured without rear bumpers, three commenters stated that the existing regulations in § 178.340-10(a) adequately address the requirement that a manufacturer must indicate specification shortages on the manufacturer's certificate. In addition, one commenter stated the cargo tank metal certification plate could be marked "without bumper." This notation would indicate that the cargo tank truck complies with the specification requirements only when it is operated in combination with a trailer or when it is equipped with a rear bumper complying with § 178.340-8(b).

Four commenters provided information on incremental costs to install rear bumpers. Cost estimates for the installation of a rear bumper ranged from a low of \$400 per vehicle to a high of \$1800. When other incidental costs associated with the installation of a rear bumper were included, such as transportation to and from the repair facility and loss of service of the cargo tank truck during the installation period, costs were estimated to be between \$1800 to \$2690 per vehicle. Additionally, commenters stated that a loss of product load would be incurred due to the added bumper weight, which would be between 100 to 500 pounds.

One commenter specifically addressed the question on the effect the tow bar length may have on safety. The commenter stated that the tow bar length is determined by the distance between the truck and trailer axles needed to meet bridge weight distribution requirements. The commenter further stated that under normal highway conditions the steering angle seldom exceeds 15 degrees. Thus, the length of the tow bar does not result in significant exposure of the cargo tank truck to a rear-end collision.

II. Discussion

As stated in the NPRM, § 178.340-8(b) has been in effect since December 1967, and similar bumper requirements have been in effect for previously manufactured specification cargo tanks since the early 1940's. Section 178.340-8(b) requires that all cargo tanks must be protected by the use of a rear bumper. However, a large number of cargo tank trucks used in combination with cargo tank full trailers have been manufactured without rear bumpers. The number of units manufactured without rear bumpers is estimated to be about 3,500. These combination units are used primarily for the transportation of

gasoline, fuel oil and other petroleum distillate products.

The NPRM issued under HM-183B was initiated following comments received under a separate regulatory action published on September 17, 1985 (50 FR 37766), under Docket Nos. HM-183, 183A. In the NPRM issued under HM-183, 183A, RSPA denied several petitions for rulemaking that had requested that rear-end tank protection be required only on the rearmost unit of a "double" cargo tank motor vehicle configuration. Commenters responding to the denial in HM-183, 183A stated that if immediate compliance is required, the economic impact of removing all affected cargo tank trucks from service would impose a burden on affected motor carriers and on the public in those geographical areas.

RSPA and the Federal Highway Administration's (FHWA) Office of Motor Carriers have given full consideration to all comments and relevant factors in the development of this final rule. We believe that a rear bumper or other cargo tank protection device is a necessary safety requirement. There are indications that these "double" combinations are at times disconnected and the cargo tank motor vehicle is operated singly in order to make a delivery. Further, there is the possibility that with some tow bar lengths of up to 16 feet, an automobile (i.e. compact, subcompact, or even a mid-size) could strike the rear of the cargo tank truck, even when operated in combination with a full cargo tank trailer.

However, we do acknowledge that immediate enforcement of the rear bumper requirement may impose a burden on affected motor carriers by requiring the removal of all affected vehicles from service at the same time, and on the general public by interrupting the delivery of petroleum distillate in the affected geographical areas. Because of the potential burden, we are allowing a 36-month time period for cargo tank operators to bring their units into compliance. By allowing this time period, little, if any, interruption of petroleum product delivery should occur. This should also provide motor carriers with sufficient time to bring their fleets into compliance on a periodic basis, such as during routine maintenance or repair operations.

We are allowing the requirement for rear-end tank protection to be met by the use of a rear bumper as prescribed in existing § 178.340-8(b) or by a rear-end tank protection device, that was proposed in HM-183, 183A (50 FR 37600, September 17, 1985; 50 FR 49866, December 5, 1985). Under current

§ 178.340-8(b) and as adopted in § 178.340-8(b)(1) herein, the rear bumper serves two functions. First, as required by § 178.340-8, the bumper must protect the cargo tank and any tank component that may retain lading from damage as a result of a collision with another vehicle or with a structure during backing. Second, as required by 49 CFR 393.86, the bumper serves as a rear-end under-ride protection device to protect occupants of any vehicle that may collide with the rear-end of the cargo tank. Under § 178.340-8(b)(2), as adopted herein, the rear-end tank protection device may be separate from the rear-end under-ride protection device. However, in the latter situation, the manufacturer must still satisfy the requirements in § 393.86 to provide under-ride protection.

In the September 17 notice, RSPA proposed that a "rear-end tank protection device must be of a width and height adequate to protect the cargo tank * * * from damage that would result in loss of lading." Commenters responding to the proposal requested that the width and height of the rear-end tank protection device be defined. They argued that in the absence of any dimensional information, any damage resulting in a loss of lading would constitute noncompliance with the rear-end tank protection requirements on the part of the manufacturer. By prescribing a performance standard, RSPA intended to allow a degree of flexibility in the design of the rear-end tank protection device. However, we recognize the difficulty in designing a rear-end tank protection device that takes into account all possible accident scenarios which could result in a loss of lading.

Therefore, in the December 5, 1985 notice, RSPA proposed: "The rear-end tank protection device must have a horizontal dimension at least equal to that of the cargo tank and a vertical dimension of at least 6 inches, and located at a height so as to minimize damage to the cargo tank, and its valves, fittings, or piping which could result in a possible loss of lading." Most commenters to the rear-end tank protection device requirement requested that the final rule incorporate the dimensions currently specified in § 393.86 for rear bumpers instead of the proposed requirements. As was discussed at the various public meetings held during the comment period, we believe the rear-end tank protection device must be positioned to provide the greatest degree of protection for the tank, piping, and fittings the device is designed to protect. The most appropriate location for the device might not be within the dimensions specified

in § 393.86 for the height of the rear bumper. Therefore, the dimensions contained in § 393.86, with the exception of that for the height, are specified in § 178.340-8(b) in this final rule. The height of the device may not be more than 60 inches from the ground with the vehicle empty, as compared with a height of not more than 30 inches for the rear-end under-ride device. The height requirement of the device has been changed in order to allow the rear-end protection device to be closer to the piping or fittings it is designed to protect. This rule permits a rear-end protection device which is notched, indented or has separated sections; prescribes the maximum transverse distance from the widest part of the motor vehicle at the rear to the device; and clarifies the fact that this kind of device is allowed only when the product piping at the rear of the cargo tank is equipped with a sacrificial device, such as a shear section, outboard of a shut-off valve. We believe these changes will offer persons, who prefer to have the rear-end under-ride device separate from the rear-end tank protection device, more flexibility in the design of the rear-end tank protection device and flexibility in positioning this device in a manner where it will offer the best protection to the tank and any piping or fitting. Accordingly, in addition to clarifying the requirements for the device, we have provided a range of alternative locations for the rear-end tank protection device.

The 36-month compliance period being granted in this final rule applies only to those units that are operated in "double" combinations. However, a cargo tank truck, without a cargo tank full trailer attached, may be taken to a repair facility to be equipped with the required rear bumper or tank protection device. Any other operation of the cargo tank truck without a rear bumper or rear-end tank protection device remains a violation of the HMR and subject to enforcement actions. We also are limiting the provision to cargo tank trucks used to transport gasoline and other petroleum distillates. We received no request from industry representatives to extend the provision to include other kinds of hazardous materials.

III. Administrative Notices

Executive Order 12291

RSPA has determined that this final rule (1) is not "major" under Executive Order 12291; (2) is not "significant" under DOT's regulatory policies and procedures (44 FR 11034); and (3) does not require an environmental impact

statement under the National Environmental Policy Act (40 U.S.C. 4321 et seq.). A regulatory evaluation is available for review in the docket.

Impact on Small Businesses

Commenters estimated that this regulation will effect no more than 3500 vehicles, at costs ranging from \$400 to \$1800 per vehicle. Based on these estimates, I certify that this regulation will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Executive Order 12612

I have reviewed this regulation in accordance with Executive Order 12612 ("Federalism") and have determined it has no substantial direct effects on the States, on the Federal-State relationship or the distribution of power and responsibilities among levels of government. Thus, this regulation contains no policies that have Federalism implications, as defined in Executive Order 12612, and therefore no Federalism Assessment has been prepared.

List of Subjects

49 CFR Part 173

Hazardous materials transportation, Motor vehicles, Packaging and containers.

49 CFR Part 178

Hazardous materials transportation, Packaging and containers.

In consideration of the foregoing, Parts 173 and 178 are amended as follows:

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

1 The authority citation for Part 173 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 1806, 1807, 1808; 49 CFR Part 1, unless otherwise noted.

2. In § 173.33, paragraph (a)(2) is added to read as follows:

§ 173.33 Qualification, maintenance and use of cargo tanks.

(a) * * *

(2) Notwithstanding the requirements in paragraph (b) of this section, the requirement in § 178.340-8 of this chapter for a rear bumper or rear-end tank protection device on MC-300, MC-301, MC-302, MC-305, and MC-306 cargo tanks does not apply to a cargo

tank truck (power unit) until July 1, 1992, if the cargo tank truck—

(i) Was manufactured before July 1, 1989;

(ii) Is used to transport gasoline or any other petroleum distillate product; and

(iii) Is operated in combination with a cargo tank full trailer. However, an empty cargo tank truck, without a cargo tank full trailer attached, may be operated without the required rear bumper or rear-end tank protection device on a one-time basis while being transported to a repair facility for installation of a rear bumper or rear-end protection device.

PART 178—SHIPPING CONTAINER SPECIFICATIONS

3. The authority citation for Part 178 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 1808; 49 CFR 1.53, unless otherwise noted.

4. In § 178.340-8, paragraph (b) is revised to read as follows:

§ 178.340-8 Accident damage protection.

(b) *Rear-end Protection.* Each cargo tank shall be provided with a rear accident damage protection device to protect the tank and piping in the event of a rear-end collision and reduce the likelihood of damage which could result in the loss of lading. The rear-end protection device must be in the form of a rear bumper or rear-end tank protection device meeting the following:

(1) *Rear bumper.* (i) The bumper shall be located at least 6 inches to the rear of any vehicle component used for loading or unloading or that may contain lading while the vehicle is in transit.

(ii) The dimensions of the bumper shall conform to § 393.86 of this title.

(iii) The structure of the bumper shall be designed to withstand, without leakage of lading, the impact of the vehicle with rated payload, at a deceleration of 2 "g" using a safety factor of two based on the ultimate strength of the bumper material. Such impact shall be considered uniformly distributed and applied horizontally (parallel to the ground) from any direction at an angle not exceeding 30 degrees to the longitudinal axis of the vehicle.

(2) *Rear-end tank protection device.* (Nothing in this paragraph shall be construed to relieve a manufacturer of responsibility for complying with the requirements of § 393.86 of this title.)

(i) The inboard surface of the rear-end tank protection device shall be located at least 6 inches to the rear of any vehicle component used for loading or unloading or that may contain lading while the vehicle is in transit, in order to prevent the device from applying force upon the cargo tank or tank components in the event of an accident.

(ii) The dimensions of the rear-end tank protection device shall conform to the following:

(A) The bottom surface of the rear-end protection device must be at least 4 inches below the lower surface of any valve, fitting, or piping at the rear of the tank and not more than 60 inches from the ground with the vehicle empty.

(B) The maximum width of a notch, indentation, or separation between sections of a rear-end tank protection device may not exceed 24 inches. A notched, indented, or separated rear-end protection device may be used only when the piping at the rear of the tank is equipped with a sacrificial device outboard of a shutoff valve. (A sacrificial device is an element, such as a shear section, designed to fail under load in order to prevent damage to any lading retention part or device. The device must break under strain at no more than 70 percent of the strength of the weakest piping element between the tank and the sacrificial device. Operation of the sacrificial device must leave the remaining piping and its attachment to the tank intact and capable of retaining lading.)

(C) The widest part of the motor vehicle at the rear may not extend more than 18 inches beyond the outermost ends of the device or (if separated) devices on either side of the vehicle.

(iii) The structure of the rear-end tank protection device and its attachment to the vehicle must be designed to withstand, without leakage of lading, the impact of the cargo tank motor vehicle at rated payload, at a deceleration of 2 "g" using a safety factor of two based on the ultimate strength of the materials used. Such impact shall be considered uniformly distributed and applied horizontally (parallel to the ground) from any direction at an angle not to exceed 30 degrees to the longitudinal axis of the vehicle.

Issued in Washington, DC, on April 21, 1989, under the authority delegated in 49 CFR Part 1.

Travis P. Dungan,

Administrator, Research and Special Programs Administration.

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